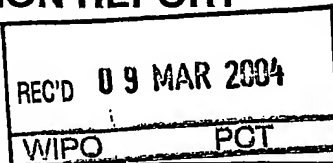


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference FLEXPAA0203WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DK 03/00191	International filing date (<i>day/month/year</i>) 20.03.2003	Priority date (<i>day/month/year</i>) 20.03.2002
International Patent Classification (IPC) or both national classification and IPC B29C47/02		
Applicant NKT FLEXIBLES IS		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 8 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

I ☒ Basis of the opinion

II ☐ Priority

III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

IV ☐ Lack of unity of invention

V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

VI ☐ Certain documents cited

VII ☐ Certain defects in the international application

VIII ☐ Certain observations on the international application

Date of submission of the demand 02.10.2003	Date of completion of this report 09.03.2004
Name and mailing address of the International preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Van Nieuwenhuize, O Telephone No. +31 70 340-3435 <div style="text-align: right;"> </div>

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/DK 03/00191**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-30 as originally filed

Claims, Numbers

1-41 as originally filed

Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/DK 03/00191**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	6-8,26-28,32-36,39,40
	No: Claims	1-5,9-25, 29-31, 37,38,41
Inventive step (IS)	Yes: Claims	
	No: Claims	1-41
Industrial applicability (IA)	Yes: Claims	1-41
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

D1: US-A-6053214
D2: US-A-6106761
D3: WO-A-0100381
D4: WO-A-0070256
D5: US-A-5918641
D6: US-A-4144111

2. In respect of Article 6 PCT the following is observed.

2.1 Although claims 31, 32 and 33 comprise by reference all the features of independent claim 1, they are not formulated as dependent claims on claim 1 as stipulated by Rule 6.4 PCT, for which reason claims 31 and 32 lack clarity. Amendment by reformulation into "A process according to claim 1" would obviate this objection.

2.2 Similarly claims 38 - 41 should be reformulated as being dependent on claim 37.

2.3 In claim 37 an offshore pipe is defined in terms of a process of manufacture. Since there are no provisions under the PCT for the interpretation of this kind of claim, this written opinion has been drafted considering this claim as if it were including the features of the method claims to which they refer. However the applicant should be aware that some national and/or regional offices, for instance the European Patent Office, consider such claims admissible only if the product as such fulfils the requirements for patentability, i.e. inter alia their subject-matter is novel and inventive, whereby a product is not considered to be rendered novel merely by the fact that it is produced by means of a new process.

2.4 The cascade of expressions "into or onto", cf. line 5, and "preferably ... above", cf. lines 11, "selected from" result in a definition of the matter for which protection is

sought by various optional features in such a way, that the recognition of the essential features for the definition of this matter, as referred to in the PCT-Guidelines, C-III, 4.4, becomes unnecessary complicated if not impossible, for which reason the subject-matter of claim 1 lacks clarity and claim 1 does not meet the requirements of Article 6 PCT.

2.5 The wording "substantially above", cf. claim 1, line 10, causes a further lack of clarity, cf. the PCT-Guidelines, C-III, 4.5a.

2.6 Similar and other clarity objections as made under points 2.4 and 2.5 of this written opinion are applicable to the various dependent claims as listed herein below:

claim 3: "such as", "preferably"

claim 4: "preferably", "the ... pipe", cf. claim 1 in conjunction with PCT-Guidelines, C-III, 4.8

claim 5: "the ... pipe"

claim 8: "preferably"

claim 9: "such as", "preferably"

claim 10: "preferably"

claim 11: "such as", "preferably selected from", "about"

claim 12: "preferably", "such as", "preferably selected from", "about", "(s)"

claim 13: "such as", "preferably", "about"

claim 14: "preferably"

claim 15: "preferably selected from" and the brandname "Trigonox 145B"

claim 16: "such as" and the range between 0.5µm - 20 cm being broader than the selection in claim 1

claim 17: "preferably"

claim 18: "such as", "preferably"

claim 19: "preferably"

claim 20: "preferably"

claim 21: "preferably"

claim 22: "the degree", "preferably"

claim 25: "preferably"

claim 26: "such as"

claim 27: "preferably"

- claim 28: "preferably"
- claim 29: "approximately equal", "preferably"
- claim 30: "preferably"
- claim 34: "such as", "preferably"
- claim 36: "such as"

3. The following is stated under reference to paragraph 2 of this communication, whereby it is to be noted, that unclear terms cannot be used for unambiguously distinguishing over prior art for the assessment of novelty or inventive step.
- 3.1 Document D1, cf. col. 22, lines 26 - 42, col. 23, par. 3 and col. 24, lines 25 - 44, discloses a process suitable for the production of a polymer layer of a flexible unbonded offshore pipe comprising the steps of shaping a polymer material by extrusion into or onto a supporting unit in an extrusion station and cross-linking said extruded polymer material, said polymer material comprising a polyethylene and a peroxide having an activation temperature substantially above the temperature of the polymer material during the extrusion thereof for providing a cross-linking of the polymer material, said cross-linking of said extruded polymer material being carried out by exposing the extruded polymer material to electromagnetic waves, selected from the group consisting of infrared radiation and microwave.

Document D2, cf. claims 1, 7 - 9, 31 and fig. 1, discloses a process suitable for the production of a polymer layer of a flexible unbonded offshore pipe comprising the steps of shaping a polymer material by extrusion into or onto a supporting unit in an extrusion station and cross-linking said extruded polymer material, said polymer material comprising a polyethylene and a peroxide having an activation temperature substantially above the temperature of the polymer material during the extrusion thereof for providing a cross-linking of the polymer material, said cross-linking of said extruded polymer material being carried out by exposing the extruded polymer material to infrared radiation and thereby to electromagnetic waves, selected from the group consisting of infrared radiation and microwave.

Another process in accordance with claim 1 is known from D3, cf. the example.

The dimensions of the layer for the offshore pipe are not further specified in claim 1 and the description mentions various thickness ranges, cf. page 13, paragraph 2, page 21, paragraph 21 and the example. Consequently the subject-matter of claim 1 as interpreted with the meaning of its words in the art or based on the description is deprived of novelty and claim 1 does not meet the requirements of Article 33(2) PCT.

- 3.2 Documents D4, cf. page 5, par. 2, D5, cf. col. 2, lines 28 - 31, D6, cf. claim 1, disclose a flexible unbonded offshore pipe comprising at least one polymer layer, said polymer layer being obtainable using the process as defined in claim 1.

Therefore the subject-matter of claim 37 lacks novelty and claim 37 does not meet the requirements of Article 33(2) PCT.

4. Due to the lack of clarity of the independent claims, which in their present form do not meet the requirements of Articles 33(2) and (3) PCT as set out hereinabove, it remains questionable whether the requisite unity of invention (Rule 13.1 PCT) in respect of the subject-matter of the various dependent claims exists; a technical relationship involving one or more of the same or corresponding special technical features between the subject-matter of the various dependent claims is required in the sense of Rule 13.2 PCT. The examining instance cannot confirm, that the identification and selection of a single feature from the various possibilities included by these dependent claims in order to come to a combination of features meeting the requirements of Article 33(2) PCT would solve an objective underlying problem based on the application documents as originally filed.

Consequently a compliance with Article 33(2) PCT of the dependent claims 2 - 36 and 38 - 41 cannot be confirmed in this report.

- 5.1 The independent claims have not been drafted in the two-part form in accordance with Rule 6.3(b) PCT.
- 5.2 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents cited in this report is not mentioned in the description,

nor are these documents identified therein.